

Volatility Crash Overlay Gate

Volatility-stress gate diagnostics across liquid macro proxy exposures.

FAMILY Volatility stress overlay	UNIVERSE Liquid macro ETF and index proxy panel	RESEARCH HORIZON Stress-overlay diagnostic
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Executive Summary

Volatility Crash Overlay Gate evaluates historical stress-state diagnostics on a liquid macro proxy panel. The full-period trigger rate is 19.98%, with 54.50% crash capture and 8.50% false-positive rate.

Research horizon	Stress overlay
Trigger rate	19.98%
Crash capture	54.50%
Vol reduction	3.51%
Return drag	-1.63%

Observations

1. The gate is evaluated as a risk-state diagnostic, not as a live hedge instruction.
2. Crash capture, false-positive rate and return drag must be read together.
3. Formula details, trigger thresholds and implementation parameters are intentionally not disclosed.

Data and Research Setup

The setup evaluates stress-state gates on a liquid macro proxy panel using historical daily observations.

UNIVERSE

Liquid macro ETF and index proxy panel. Current positions and live trigger lists are not shown.

INPUTS

Historical price, volatility and stress-state fields are aligned to a dated research panel.

COMPARISON BASIS

Overlay and baseline diagnostics are compared under the same dates and cost convention.

OUTPUT BOUNDARY

The figures are historical diagnostics and do not present current positions or trade instructions.

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Signal Methodology

Without disclosing the exact functional, the construction proceeds along three conceptual steps.

STEP 1

Stress-state scoring

The design assigns a dated stress score from prior market and volatility conditions.

STEP 2

Gate comparison

Triggered observations are compared with non-triggered observations over the following stress window.

STEP 3

Diagnostic evaluation

Crash capture, false positives, volatility reduction and return drag are reviewed together.

The description is intentionally conceptual. Formula details, exact construction rules and implementation parameters are not disclosed.

Results and Diagnostic Context

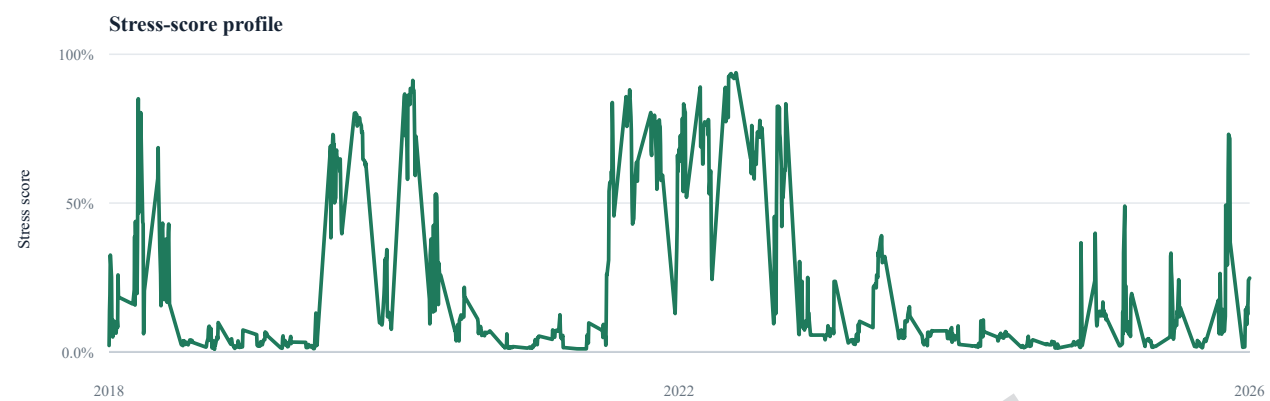


Figure 1. Monthly average stress-score profile. The vertical scale is anchored at zero, and the series should be read as a stress diagnostic, not as a standalone return path.

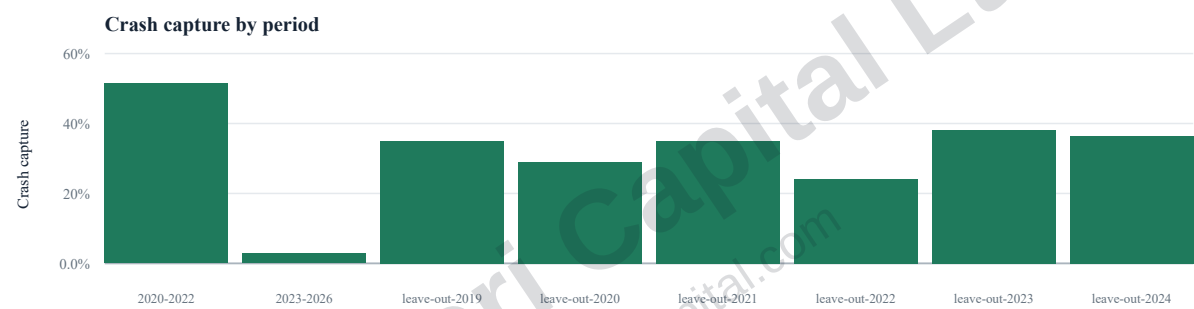


Figure 2. Crash-capture rate across available research periods.

Period	Trigger rate	Crash capture	False positive	Vol reduction	Return drag
2020-2022	22.55%	51.43%	5.49%	4.53%	+3.56%
2023-2026	3.50%	2.82%	3.63%	0.09%	-1.30%
leave-out-2019	12.41%	35.07%	4.37%	2.66%	+0.97%
leave-out-2020	9.86%	28.92%	4.15%	0.72%	-0.28%
leave-out-2021	13.59%	35.07%	4.71%	2.91%	+0.90%
leave-out-2022	6.81%	24.14%	3.48%	2.65%	+0.58%
leave-out-2023	13.19%	38.14%	3.99%	2.93%	+1.50%
leave-out-2024	13.04%	36.45%	3.86%	2.87%	+1.31%

The diagnostic is useful only when capture evidence is read alongside false positives and return drag.

Stability and Robustness

Stability is assessed from period-level crash capture, false positives and volatility reduction.

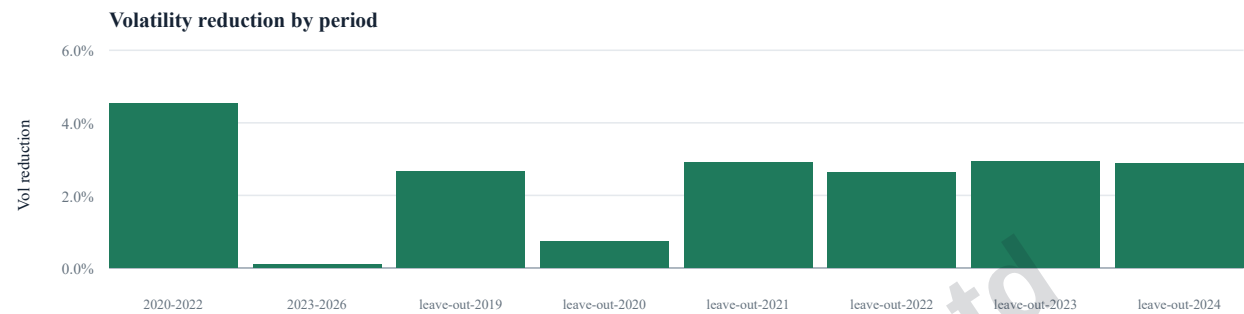


Figure 3. Volatility reduction by research period. The vertical scale is anchored at zero.

Period	Trigger rate	Crash capture	False positive
2020-2022	22.55%	51.43%	5.49%
2023-2026	3.50%	2.82%	3.63%
leave-out-2019	12.41%	35.07%	4.37%
leave-out-2020	9.86%	28.92%	4.15%
leave-out-2021	13.59%	35.07%	4.71%
leave-out-2022	6.81%	24.14%	3.48%
leave-out-2023	13.19%	38.14%	3.99%
leave-out-2024	13.04%	36.45%	3.86%

A useful overlay diagnostic should not rely only on one stress window.

Research Interpretation

The gate is retained in the research library as volatility-stress diagnostic evidence.

ROLE

Secondary stress-overlay diagnostic.

CAPTURES

Historical stress-state behaviour across liquid macro proxy exposures.

USE

Risk-state comparison component inside broader systematic allocation research.

LIMITATIONS

The note does not disclose construction details, thresholds, model parameters, current triggers, execution assumptions or product suitability.